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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,143	02/04/2002	Hidetoshi Naruki	MM4513 CON.	7316
1109	7590	12/15/2005	EXAMINER	
ANDERSON, KILL & OLICK, P.C. 1251 AVENUE OF THE AMERICAS NEW YORK,, NY 10020-1182			SELLERS, DANIEL R	
			ART UNIT	PAPER NUMBER
			2644	

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/067,143

Applicant(s)

NARUKI ET AL.

Examiner

Daniel R. Sellers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 60-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 60-62 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/025,886.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claim 60 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Han (cited previously), Takahashi (cited previously), and Aylward, U.S. Pat. No. 4,467,287.
3. Regarding claim 60, Takahashi teaches a normalizing circuit, which shifts data to reduce the bit-length (Col. 1, lines 15-46). Takahashi teaches that this circuit can be specifically useful in arithmetic operations (Col. 3, lines 5-54). One of ordinary skill understands that the shift operation is inherently a multiplication operation, wherein a shift to the left by N bits multiplies by  $2^N$  and a shift to the right divides in the same manner. The level-shift control data is stored as the exponent.

Han teaches a denormalization device for use in MPEG-2 streams, wherein it is inherent that the digital multi-channel audio signals were converted from analog signals. It is well-known that a bit-length of a digital audio signal describes a level range (e.g. 8-bits = 256 levels and 16-bits = 65536 levels). Han teaches that level-shift data, or denormalization data, is applied to return the audio signals back to the original levels, therefore it is inherent that a system created this level-shift data and packed stream. It is also inherent that packed stream is delivered from a medium, such that it is inherent that it is stored on a medium, and modulation by definition occurs when the stream is normalized. It is well-known that multiple channels in a multi-channel system are level-

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shifted by the same amount, i.e. a left and right channel signal are locked to be normalized by the same factor.

Han teaches the features as stated above. Han teaches that it is favorable to reduce the denormalization process to one multiplication (Col. 1, lines 60-65), however Han does not explicitly state that a shift operation is occurring. Takahashi teaches a variable bit-length normalization circuit (Col. 2, lines 34-37). It would have been obvious for one of ordinary skill in the art to combine the teachings of Han and Takahashi for the purpose of faster processing. It is well-known that a shifting process is a faster implementation of multiplying.

Han and Takahashi do not teach producing shift-level data for time intervals longer than a frame of audio. Aylward teaches that audio can be dynamically compressed prior to transmission (Col. 1, lines 30-43), and Aylward teaches that an average amplitude or an RMS amplitude of the signal is used to shift the levels of the signal (Col. 1, lines 44-55 and Col. 3, line 60 – Col. 4, line 29). The teachings of Aylward are analog in nature, but one skilled in the art can apply these teachings to the digital domain, and the teachings of Takahashi and Han. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Han, Takahashi, and Aylward to store a dynamically compressed signal for the purpose of reducing storage space requirements.

4. Regarding claim 62, see the preceding argument with respect to claim 60. The combination of Han and Takahashi teaches these features.

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5. Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Han, Takahashi, and Aylward as applied to claim 60 above, and further in view of Doi (previously cited).

6. Regarding claim 61, the further limitation of claim 60, see the previous office action. The combination of Han, Takahashi, and Aylward teaches the features of claim 60. The combination does not teach information for adjusting sound quality in the streams. Doi teaches a system to add error-correction to the signal to provide a higher quality signal in a noisy environment. It would have been obvious for one of ordinary skill in the art to combine the teachings of Han, Takahashi, Aylward and Doi for the purpose of better sound quality in a noisy environment.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 60-62 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel R. Sellers whose telephone number is 571-272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DRS



HUYEN LE  
PRIMARY EXAMINER